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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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DICKSTEIN SHAPIRO LLP
1825 EYE STREET NW
Washington, DC 20006-5403

EXAMINER	
WARTALOWICZ, PAUL A	

ART UNIT	PAPER NUMBER
1793	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/782,790	TANAKA ET AL.	
	Examiner	Art Unit	
	PAUL A. WARTALOWICZ	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-12,14-17 and 19-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-12,14-17 and 19-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 9-12,14-17,19- have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues that none of the applied prior art teach the junction auxiliary material electrically and mechanically unified with the base member and cladding layer in a unitary block.

However, it appears that Meyer teaches a heat treatment that is substantially similar to the heat treatment of the claimed invention (col. 6, lines 40-57) such that one of ordinary skill would recognize that the product produced by the heat treatment of Meyer would inherently exhibit the junction auxiliary material electrically and mechanically unified with the base member and cladding layer in a unitary block.

Applicant has not shown how the process of Meyer does not inherently form a unitary block, inter alia. Applicant has only argued that Meyer teaches that the heat treatment forms a continuous strand but does not teach a unitary block.

However, it appears that both a continuous strand and a unitary block can be formed by the same heat treatment. (Applicant's PGPub, Example 2).

Additionally, it appears that the addition of tin in the matrix would give a substantially dense composite structure after heat treatment, such that the combined prior art would inherently exhibit the junction auxiliary material electrically and mechanically unified with the base member and cladding layer in a unitary block.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16,17, 22, and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation "to be added such as shown in the added claim 21 with limitations of the present claim 10" in claim 22, lines 15-16 render the claim indefinite. It is unclear what limitations are meant to be incorporated by this recitation. Therefore, the metes and bounds of claim 22 are unclear.

Clarification and/or correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 9, 10, 12, 14, 15, 17, and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thieme et al. (U.S. 2003/0036482) in view of Yamada et al. (U.S. 5935911) and Meyer et al. (U.S. 5043320).

Thieme et al. teach magnesium boride superconducting wires [0002] wherein the magnesium boride, having a density greater than 95% (Abstract) is surrounded by tantalum, niobium, nickel, nickel alloys, iron, or molybdenum, wherein the wire further comprises a metal laminate on the outside of this barrier layer selected from the group consisting of copper, copper alloys, stainless steel, aluminum, aluminum alloys, and nickel alloys [0016]-[0018]. Additionally, Theime et al. teach a diffusion barrier surrounding the superconductor comprising nickel alloys, tungsten, and molybdenum (this layer corresponds to the metal base of the instant invention, [0016]) wherein the matrix is copper (this layer corresponds to the junction material between the base metal and the metal cladding of the instant invention, [0015]), wherein the laminate is copper (this layer corresponds to the metal cladding layer of the instant invention, [0018]).

Thieme et al. fail to teach that the base metal has one or more holes.

Yamada et al. teach a method for making a superconducting wire (col. 1) wherein a hole is formed in a portion of a molded body for the purpose of inserting core members in the hole (col. 3).

Meyer et al. teach a method for making superconducting wire (col. 1) wherein holes are formed in silver body for the purpose filling the holes with superconductor powder (col. 3).

It would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide a hole is formed in a portion of a molded body in Theime et al. in order to insert core members in the hole or in order to insert the holes with superconductor powder as taught by Yamada et al. or Meyer et al.

Additionally, it appears that Meyer teaches a heat treatment that is substantially similar to the heat treatment of the claimed invention (col. 6, lines 40-57) such that one of ordinary skill would recognize that the product produced by the heat treatment of Meyer would inherently exhibit the junction auxiliary material electrically and mechanically unified with the base member and cladding layer in a unitary block.

Where the claimed and prior art product(s) are identical or substantially identical, the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or inherently possess the characteristics of the instantly claimed product(s), see In re Best, 195 USPQ 430.

Any difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show the same process of making, see In re

Brown, 173 USPQ 685, In re Fessmann, 180 USPQ 324, In re Spada, 15 USPQ2d 1655, In re Fitzgerald, 205 USPQ 594 and MPEP 2113.

As to the limitation of “is assembled into", it is unclear how this limitation lends a patentable distinction between the claimed invention and the prior art. It appears that the prior art meets this limitation as the superconductor and covering metal are abutting the base material (outer covering).

Claims 11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thieme et al. (U.S. 2003/0036482) in view of Yamada et al. (U.S. 5935911) and Meyer et al. (U.S. 5043320) and Nakahara et al. (U.S. 6337307).

Theime et al. teach a compound sheath as described above.

Theime et al. fail to teach a plurality of the single-core or multi-core wires are assembled into the base metal and they are twisted.

Nakahara et al. teach a superconductor (col. 1) wherein a plurality of single-core wires are assembled into a base metal that are twisted (col. 11-12).

It would have been obvious to one of ordinary skill in the art at the time applicant’s invention was made to provide a plurality of single-core wires are assembled into a base metal that are twisted in Theime et al. in order to produce a known superconducting wire as taught by Nakahara et al.

Claims 11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thieme et al. (U.S. 2003/0036482) in view of Yamada et al. (U.S. 5935911) and

Meyer et al. (U.S. 5043320) and Wong (US 5470821) and Dunand (US 6995119 in reliance on provisional 60/295,447) and Nakahara et al. (U.S. 6337307).

Theime et al. teach a compound sheath as described above.

Theime et al. fail to teach a plurality of the single-core or multi-core wires are assembled into the base metal and they are twisted.

Nakahara et al. teach a superconductor (col. 1) wherein a plurality of single-core wires are assembled into a base metal that are twisted (col. 11-12).

It would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide a plurality of single-core wires are assembled into a base metal that are twisted in Theime et al. in order to produce a known superconducting wire as taught by Nakahara et al.

Claims 9, 10, 12, 14, 15, 17, and 19-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thieme et al. (U.S. 2003/0036482) in view of Yamada et al. (U.S. 5935911) and Meyer et al. (U.S. 5043320) and further in view of Wong (US 5470821) and Dunand (US 6995119 in reliance on provisional 60/295,447).

Theime teaches a method as described above in claim 9.

Theime fails to teach that the metal matrix is a tin alloy.

Wong, however teaches a superconductor material (col. 1) wherein a metallic matrix comprises tin for the purpose of promoting crystalline growth (col. 4).

Dunand teaches that tin is selected in applications with magnesium boride because tin is non-reactive with magnesium boride (col. 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide a tin matrix in Theime in order to promote crystalline growth (col. 4) and because tin is non-reactive with magnesium boride (col. 5) as taught by Wong and Dunand, respectively.

Additionally, it appears that the addition of tin in the matrix would give a substantially dense composite structure after heat treatment, such that the combined prior art would inherently exhibit the junction auxiliary material electrically and mechanically unified with the base member and cladding layer in a unitary block.

Regarding claim 26, it appears that Theime teaches the iron barrier layer is abutting the magnesium boride [0016].

Where the claimed and prior art product(s) are identical or substantially identical, the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or inherently possess the characteristics of the instantly claimed product(s), see In re Best, 195 USPQ 430.

Any difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show the same process of making, see In re Brown, 173 USPQ 685, In re Fessmann, 180 USPQ 324, In re Spada, 15 USPQ2d 1655, In re Fitzgerald, 205 USPQ 594 and MPEP 2113.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL A. WARTALOWICZ whose telephone number is (571)272-5957. The examiner can normally be reached on 8:30-6 M-Th and 8:30-5 on Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Paul Wartalowicz
June 22, 2009

/Steven Bos/
Primary Examiner, AU 1793